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Interregional net fiscal transfers resulting from the interest burden on the Belgian federal debt

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resulting from the interest burden on the Belgian federal public debt[1]

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Abstract:

This paper demonstrates for Belgium that the combination of 1) a welfare state with 2) large interregional economic disparities and 3) a high federal public debt leads to large interregional net fiscal transfers caused by the interest burden on this public debt. We calculate that over the 1970-2002 period the combination of persistent primary surpluses of the Flemish region and persistent primary deficits of the Walloon region –and to a lesser extent of the Brussels region- increased the net fiscal transfer due to the federal debt provided by Flanders to the rest of Belgium to almost 100% of the total interest burden on the Belgian federal debt. This amount is considerably larger than the transfer amount resulting from previous "traditional" interregional transfer calculations that assume a balanced federal budget. This large amount results from the contrast between the following 2 facts: 1) Flanders annually ***effectively paid*** a large share of the interest bill, as the Flemish share in federal tax revenues is the largest of all Belgian regions in absolute and relative terms; 2) Flanders annually ***should have paid*** only a small share of the interest bill given its small accumulated share in the federal public debt over time. From 1998 onwards Flanders should even have ***received interest revenue*** instead of paid interest charges, given the Flemish ***negative*** share in the federal public debt from 1998 onwards. Given the large interregional fiscal transfers resulting from the interest bill, we use the political economics framework developed by Persson and Tabellini (2000 p. 345-372) to conclude that Wallonia and Brussels have a relative interest in continued deficit financing of federal expenditures, while Flanders has a relative interest in a swift evolution towards the federal budget surpluses needed to pay down the federal debt.

[1] This paper is a substantially reworked version of our earlier papers on the same subject, in particular of "Transferten tussen de Belgische gewesten uit intrestlasten op de federale overheidsschuld" (2012). I thank Thushyanthan Baskaran, Stefaan Decramer, Herman Deweerdt, Danny Geerts, Jo Reynaerts, Robrecht Vandendriessche, Johan Van Gompel, and Annelore Van Hecke for comments on current and/or earlier versions of this paper.

I. Introduction

Not many OECD countries combine a high debt burden and a large welfare state with sizeable interregional disparities in tax revenues and public spending (which in turn may be due to interregional disparities in political representation). Examples of such countries are Belgium and Italy, which over the past decades have combined a high public debt with sizeable net fiscal transfers between their northern and southern regions. In this paper we propose a methodology to calculate interregional net fiscal transfers resulting from the interest burden on the Belgian public debt (put more briefly: net fiscal transfers resulting from the public debt, or even more briefly: interest transfers), and derive some policy implications from this calculation. We do not know of papers other than on Belgium that investigate the consequences of public debt on interregional net fiscal transfers. Examples are Algoed 2009, Van Gompel 2004, and Van Rompuy and Bilsen 1988. Compared to these earlier calculations of interregional transfers resulting from the public debt, the current attempt covers more years and argues that interest transfers should not be added to "traditional" interregional transfers, so as to avoid double counting. In its conclusion, the current paper also situates the result of our calculations within the theoretical literature on the political economy of debt financing.

It can be argued that when calculating interregional net fiscal transfers, a choice has to be made between either calculating these transfers while assuming all expenditures are tax funded (i.e. that the budget is balanced) or calculating these transfers taking into account that part of expenditures are funded by borrowing. These are 2 fundamentally different ways of net transfer calculation. It can also be argued that summing up the resp. transfer amounts obtained by each method would imply double counting of transfers. To see this, consider table 1, which calculates transfers for a fictitious country with 2 regions and only one government while assuming that all expenditures are tax funded (i.e. that the budget is balanced). This is the assumption most transfer calculations in Belgium thus far have implicitly made. As a consequence of this assumption, in fact tax revenue has to be increased proportionally for each region until total tax revenue equals total spending. Such an increase is presented in row 3. As a next step interregional transfers are obtained in row 4 by simply subtracting row 2 from row 3.

Table 1: Usual way of calculating interregional fiscal transfers in Belgium

		Region A	Region B	Whole country
1	Tax revenue collected	50	45	95
2	(Primary) spending received	55	60	115
3 = e.g. for Region A (50/95)*115	Regional distribution of tax revenue assuming all spending would be tax funded	60.5	54.5	115
4 = 3-2	**Transfers**	**5.5**	**-5.5**	**0**

However, it would be more correct to explicitly take into account that –at least in Belgium- in most years part of expenditure is debt financed. This is the aim of this paper, with the cost of making transfer calculations more complicated than shown in table 1. Moreover table 2 shows that a consequence of taking into account the distributional effects of debt financing is that the tax funded part of public spending does not generate net transfers anymore, and hence that transfers resulting from the interest burden and traditionally calculated transfers should not be added up. Table 2 shows the same fiscal situation in the same country as table 1. However, when we subtract the part of expenditure in each region that is debt financed (the opposite amounts of row 3 in table 2) to use them for transfer calculation (for more details, see the remainder of this paper), we –by definition- remain with expenditure per region (row 4) that exactly equals regional contribution to tax revenue (row 1). Hence transfers generated by the remaining expenditures are zero (row 5).

Table 2: Calculating interregional fiscal transfers in Belgium when taking into account transfer effects of interests on the public debt

		Region A	Region B	Whole country
1	Tax revenue collected	50	45	95
2	(Primary) spending received	55	60	115
3 = 1-2	Primary balance	-5	-15	-20
4 = 2+3	Tax funded (primary) spending received	50	45	95
5 = 1-4	**Transfers caused by tax funded (primary) spending received**	**0**	**0**	**0**

As said already, in Belgium in most years the overall budget is not balanced but shows a deficit. In any country, any budget deficit is to some extent unevenly spread over the regions that compose that country[2]. I.e. when disaggregating the overall budget geographically it will appear that some regions "run" a bigger primary deficit than others, or even that some regions "run" a primary surplus while others "run" a primary deficit. This year's regional budget deficits add to the previous year's public debt, and impact next year's interest burden to be paid. Interest payments constitute an expenditure category which would not be part of the budget in the absence of previous budget deficits, and which hence would not cause interregional net fiscal transfers. Once the interest burden appears as a public expenditure item, it is likely to result in interregional net fiscal transfers[3]. I.e. it is likely to result in some regions effectively paying a larger part of it than on the basis of their share in past primary deficits, and some regions effectively paying a smaller part of it.

However, once budget surpluses are run and as a consequence the public debt starts to decrease, a final type of interregional net fiscal transfers emerges, next to the "traditional" ones and next to interest transfers: i.e. interregional net fiscal transfers resulting from paying down the public debt. This is because:

1) a budget surplus effectively pays down part of the public debt thanks to tax revenue that is larger than public expenditure and that has been "provided" to a different extent by the different regions of the country concerned
2) one could argue that the share of the public debt that a particular region should have paid down, should not correspond to its share in tax revenue but to its share in the public debt, i.e. to its share in past cumulative primary balances

We will not consider nor calculate this final type of fiscal transfers in this paper, mainly because over our period considered (1970-2002) -and also thereafter-, budget surpluses have been rare and small (see column 4 of table 9). However, once Belgian public debt will start being paid back, a new type of interregional transfer will emerge. Similar to interest transfers, transfers from paying down the Belgian public debt will appear considerably larger than "traditional" transfers, for the same reason that regional shares in the primary balance in Belgium are much more different than regional shares in tax revenue and in public expenditure.

As a result of the above reasoning we arrive at the following definition of interregional interest transfers:

Interregional transfers resulting from the interest bill on the public debt

= The part of the interest burden that a particular region ***effectively*** pays

MINUS

The part of the interest burden that a particular region ***should*** pay

[2] The same holds for any budget surplus.

[3] Interest transfers are not to be confused with the interest revenues foregone by some regions because of "traditional" net fiscal transfers provided by these regions to other regions. A reasoning could be that an alternative for the provision of "traditional" transfers would be for the transfer providing region to save them and hence to cash in on the interest revenue generated by these savings. However, such interest revenue foregone would still show up in calculations of "traditional" net transfers if we would calculate these transfers for each year within a given period, after which we would discount the annual amounts obtained to one single present value.
Another confusion with respect to interest transfers is the argument made by some of the "traditional" Belgian interregional transfer studies (e.g. Abafim 2004, Commissie Vandevoorde 2006, and NBB 2008) that interest expenditures would not lead to interregional fiscal transfers because the private economic actors that hold Belgian public debt would precisely be rewarded for their investment with the interest bill paid. This reasoning seems to confuse the public aspect of the interest burden with its private aspect. Moreover, holders of public debt would also have received a reward if they had opted for an alternative investment.

= The part of the interest burden that corresponds to a particular region's part in overall ***tax revenue*** (by which we – reasonably- assume that the interest burden is a priority expenditure category, so that it is not financed by means of borrowing; in other words, expenditures financed through borrowing are not interest expenditures[4])

MINUS

The part of the interest burden that corresponds to a particular region's part in the overall ***primary budget balance*** (positive interest part if negative part in the overall primary budget balance & vice versa)

Still otherwise stated:

Interregional interest transfers

= That part of the expenditures financed by borrowing that a particular region ***should*** have benefited from given the share of the interest burden this region bears through its contribution to tax revenues[5]

MINUS

That part of public expenditures financed by borrowing that has ***effectively*** benefited a particular region

In what follows we will first apply the above definition to a fictitious numerical example, after which we will apply the hence explained methodology of interest transfer calculation to the case of the Belgian regions. Next we will try to rationalize the Belgian interregional interest transfers from a political economics perspective, before ending with some policy conclusions.

[4] However, because of the fungibility of money, it is in practice mostly impossible to determine how a particular expenditure is financed, through tax money or through borrowing.
[5] This is also the criterion used and explained in Algoed (2009).

II. A simple numerical example for a country with only 2 regions

Before proposing a calculation of the interest transfers in Belgium, we explain our methodology by means of a fictitious numerical example, which will prove to be much more simple than the Belgian situation, but still sharing important characteristics with the Belgian case (as will become clear in chapter III).

Table 3 describes the starting year T1 in a country with 2 regions A and B (and only one –central- government), which run a different primary balance (row 4) because they contribute the same amount to total tax revenues (row 2) but benefit to a different extent from public expenditures (row 3). We assume for the sake of simplicity that all interests to be paid on the debt that is caused by the primary deficit run in year T1, have to be paid in year T2[6]. Therefore interests due in year T1 are zero (rows 5 and 6), and hence also net fiscal transfers due to the interest burden (rows 7 and 8). Therefore also at the end of year T1 the primary balance equals the budget balance (row 9).

However, because of the different regional shares in tax revenue and in spending (rows 2 and 3), transfers in year T1 are not zero when calculated the traditional way, as shown in row 11. To this effect we recalculate tax revenues per region (row 2) as if all spending would be tax funded, resulting in row 10. Subtracting row 3 from row 10 gives row 11[7].

Table 3: T1: Both regions run a primary deficit, but of a different size

T1		**Region A**	**Region B**	**Whole country**
1	Debt (at **beginning** of period)	0	0	0
2	Tax revenue collected	45	45	90
3	(Primary) spending received	55	60	115
4 = 2-3	Primary balance	-10	-15	-25
5	Interests actually paid	0	0	0
6	Interests to pay given share in debt	0	0	0
7	**Transfers due to interest burden**	**0**	**0**	**0**
8	Interest transfers as share of interest burden	0%	0%	0%
9 = 4-6	PM: Budget balance	-10	-15	-25
10 = e.g. for Region A (45/90)*115	PM: Regional distribution of tax revenue assuming all spending would be tax funded	57.5	57.5	115
11 = 10-3	PM: Transfers calculated the traditional way	2.5	-2.5	0
12 = (11 as a share of last column of 3)	PM: Transfers as share of total (primary) spending	2%	-2%	0%

Now suppose that in year T2, regional primary balances stay the same as in year T1, a situation shown in table 4. Hence the only difference[8] with year T1 is that now interest charges have to be paid, i.e. on the debt incurred in year T1. We crucially assume that the entire interest bill is paid with tax revenue, as the interest bill is evidently a priority public expenditure[9]. The assumption of payment of the interest bill with tax revenue has consequences for the calculation of interest transfers: as both regions contribute the same amount to total tax revenue, they ***de facto*** pay an equal part of the interest bill (row 5). However, as the share of region B in the public debt is the higher one (row 1), region B ***should*** pay a larger share of the interest bill than region A (row 6). This difference leads to interregional interest transfers (row 7).

The difference between the share of interest transfers in the total interest bill (row 7) and the share of transfers calculated the traditional way in total primary expenditures (row 12) is striking: the former is far larger than the latter.

Although we assume that the interest bill –as a priority expenditure- is paid with tax revenue, we assume that interest expenditure does not crowd out existing primary expenditures, but simply adds to it, i.e. the central government allows total expenditure to increase with the interest bill[10]. As a consequence the budget deficit (row 9)

[6] This assumption does not impact the size of the interregional interest transfers over our entire period considered.
[7] In this paper we present an outgoing transfer as a positive amount and an incoming transfer as a negative amount.
[8] Of course another obvious difference is that the public debt at the start of year T2 is no longer zero.
[9] This assumption implies that the "last" public expenditures done, i.e. non-priority public expenditures or extra public expenditures, are financed with borrowing.
[10] This accommodating stance implies that the central government allows the interest bill in turn to worsen the fiscal situation, opening the door to a so called interest snowball: deficits not only increasing the interest bill, but also the interest bill increasing

increases with the interest bill (as in row 6) compared to year T1. As another consequence public debt at the beginning of year T3 (row 1 in table 5) of course not only increases with the primary deficit (i.e. with the opposite of row 4) but also with the interest bill (as in row 6).

Hence only from T3 onwards a Region's share in public debt is composed of all of its 3 possible components, as expressed in the below formula:

$$D_i^t = D_i^{t-1} - PB_i^{t-1} + I_i^{t-1}$$

I.e. a Region's share of the public debt at the beginning of period t equals:

- that Region's debt share at the beginning of period t-1,
- minus that Region's share in the primary balance run during period t-1,
- plus that Region's share in the interest bill to pay in period t-1 ***given its debt share***

The 3rd term, i.e. a Region's share in the interest bill to pay in period t-1 ***given its debt share***, equals the interest rate times that Region's share in the public debt at the beginning of period t-1, and is expressed in the below formula:

$$I_i^{t-1} = i * D_i^{t-1}$$

Table 4: T2: Both regions run a primary deficit, but of a different size (bis)

T2		**Region A**	**Region B**	**Whole country**
1 = (1 in T1 - 4 in T1 + 6 in T1)	Debt (at **beginning** of period)	10	15	25
2	Tax revenue collected	45	45	90
3	(Primary) spending received	55	60	115
4 = 2-3	Primary balance	-10	-15	-25
5 = e.g. for Region A (45/95)*2.5	Interests actually paid	1.3	1.3	2.5
6 = (10% of 1)	Interests to pay given share in debt	1	1.5	2.5
7 = 5-6	**Transfers due to interest burden**	**0.3**	**-0.3**	**0**
8 = (7 as a share of last column of 5)	Interest transfers as share of interest burden	10%	-10%	0%
9 = 4-6	PM: Budget balance (including interests due given share in debt)	-11	-16.5	-27.5
10 = e.g. for Region A (45/90)*115	PM: Regional distribution of tax revenue assuming all spending would be tax funded	57.5	57.5	115
11 = 10-3	PM: Transfers calculated the traditional way	2.5	-2.5	0
12 = (11 as a share of last column of 3)	PM: Transfers (the traditional way) as share of total (primary) spending	2%	-2%	0%

Suppose now that in year T3 the previous situation drastically changes. Suppose e.g. that a newly elected central government implements fiscal consolidation measures in the form of a tax increase and an expenditure cut which only –or overwhelmingly- affect region A (e.g. because of region A's economic characteristics being very different from region B's, or because region A being much less represented in the newly elected government). This situation is shown in table 5: tax revenue contributed by region A increases (row 2) and public expenditure benefited from by region A decreases (row 3), resulting in a primary surplus rather than a primary deficit generated by region A (row 4). Of course, such a regional asymmetry with respect to tax revenue and expenditures increases transfers calculated the traditional way considerably (rows 11 and 12). However, the primary surplus of region A is not large enough to generate a country-wide primary surplus (last column of row 4). Because of the larger share of region A in tax revenue, the part of the interest bill actually paid by region A increases (row 5). In combination with the larger interest bill in general (compare last columns of rows 5 in tables 4 and 5), this leads to larger interest transfers (row 7). Despite the resulting stronger increase in traditional transfers than in interest transfers when expressed in relative terms, the former remain smaller than the latter (compare row 12 to 8)[11].

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the deficit. Such a snowballing effect risks in particular to occur if the interest rate is higher than economic growth and it can even occur in a situation of a primary surplus. Belgium effectively suffered from an interest snowball between 1977 and 1988, between 1991 and 1993, and from 2009 onwards. (NBB 2010 p. 168)

[11] Basically this is because Region A's share in the total primary deficit (-10/-25, i.e. 2/5) is considerably smaller than Region A's share in total (primary) expenditures (55/115, i.e. 11/23). Or otherwise stated: Region B's share in the total primary deficit (-15/-25, i.e. 3/5) is considerably larger than Region B's share in total (primary) expenditures (60/115, i.e. 12/23).

Table 5: T3: One region runs a primary surplus, the other region runs a primary deficit

T3		**Region A**	**Region B**	**Whole country**
1 = (1 in T2 - 4 in T2 + 6 in T2)	Debt (at **beginning** of period) (including interests due given share in debt in t-1)	21	31.5	52.5
2	Tax revenue collected	60	45	105
3	(Primary) spending received	55	60	115
4 = 2-3	Primary balance	5	-15	-10
5 = e.g. for Region A (60/105)*5.3	Interests actually paid	3.0	2.3	5.3
6 = (10% of 1)	Interests to pay given share in debt	2.1	3.2	5.3
7 = 5-6	**Transfers due to interest burden**	**0.9**	**-0.9**	**0**
8 = (7 as a share of last column of 5)	Interest transfers as share of interest burden	17%	-17%	0%
9 = 4-6	PM: Budget balance (including interests due given share in debt)	2.9	-18.2	-15.3
10 = e.g. for Region A (60/105)*115	PM: Regional distribution of tax revenue assuming all spending would be tax funded	65.7	49.3	115.0
11 = 10-3	PM: Transfers calculated the traditional way	10.7	-10.7	0
12 = (11 as a share of last column of 3)	PM: Transfers (the traditional way) as share of total (primary) spending	9%	-9%	0%

Suppose that the situation described in table 5 continues for another year, as shown by table 6. As a result of the budget surplus of region A in year T3, the debt to be assigned to region A (compare rows 1 of tables 5 and 6) is lower at the start of T4 than at the start of T3. Overall however, debt has still increased. These 2 facts combined increase interest transfers (row 7) even further, while traditional transfers remain constant (row 11), as the regional shares in tax revenue (row 2) and in primary spending (row 3) do not change between T3 and T4. This contrast in turn widens the gap between relative interest transfers (row 7) and relative “traditional” transfers (row 12). Notice that the change in interest transfers is entirely due to events that happened in the previous year T2 (i.e. the change in the primary balances in year T2), because the interest rate and the tax revenue collected per region did not change between years T2 and T3.

Table 6: T4: One region runs a primary surplus, the other region runs a primary deficit (bis)

T4		Region A	Region B	Whole country
1 = (1 in T3 - 4 in T3 + 6 in T3)	Debt (at **beginning** of period) (including interests due given share in debt in t-1)	18.1	49.7	67.8
2	Tax revenue collected	60	45	105
3	(Primary) spending received	55	60	115
4 = 2-3	Primary balance	5	-15	-10
5 = e.g. for Region A (60/105)*6.8	Interests actually paid	3.9	2.9	6.8
6 = (10% of 1)	Interests to pay given share in debt	1.8	5.0	6.8
7 = 5-6	**Transfers due to interest burden**	**2.1**	**-2.1**	**0**
8 = (7 as a share of last column of 5)	Interest transfers as share of interest burden	30%	-30%	0%
9 = 4-6	PM: Budget balance (including interests due given share in debt)	3.2	-20.0	-16.8
10 = e.g. for Region A (60/105)*115	PM: Regional distribution of tax revenue assuming all spending would be tax funded	65.7	49.3	115
11 = 10-3	PM: Transfers calculated the traditional way	10.7	-10.7	0
12 = (11 as a share of last column of 3)	PM: Transfers (the traditional way) as share of total (primary) spending	9%	-9%	0%

For the sake of completeness, table 7 describes year T5, in which also the primary deficit of region B is eliminated, but to a less drastic extent than in region A. Because both regions now contribute the same amount in tax revenues, as in years T1 and T2, the new increase in interest transfers is entirely due to the increase in the debt of region B due to events in year T4. Table 7 shows that interest transfers can be large and can even increase in years of an overall primary surplus. Notice however that in year T5 there still is an overall budget deficit. Of course, because of the narrowed difference in regional primary balances, "traditional" transfers decrease sharply between years T4 and T5.

Table 7: T5: Both regions no longer run a primary deficit, but their surpluses are of a different size

T5		Region A	Region B	Whole country
1 = (1 in T4 - 4 in T4 + 6 in T4)	Debt (at **beginning** of period) (including interests due given share in debt in t-1)	14.9	69.6	84.5
2	Tax revenue collected	60	60	120
3	(Primary) spending received	55	60	115
4 = 2-3	Primary balance	5	0	5
5 = e.g. for Region A (60/120)*8.5	Interests actually paid	4.2	4.2	8.5
6 = (10% of 1)	Interests to pay given share in debt	1.5	7.0	8.5
7 = 5-6	**Transfers due to interest burden**	**2.7**	**-2.7**	**0**
8 = (7 as a share of last column of 5)	Interest transfers as share of interest burden	32%	-32%	0%
9 = 4-6	PM: Budget balance (including interests due given share in debt)	3.5	-7.0	-3.5
10 = e.g. for Region A (60/105)*115	PM: Regional distribution of tax revenue assuming all spending would be tax funded	57.5	57.5	115
11 = 10-3	PM: Transfers calculated the traditional way	2.5	-2.5	0
12 = (11 as a share of last column of 3)	PM: Transfers (the traditional way) as share of total (primary) spending	2%	-2%	0%

Finally, table 8 describes year T6, in which region B additionally catches up with region A at the expenditure side (row 3). Of course this evolution reduces "traditional" transfers to zero. As expected however, this change does not affect the interest transfers, which keep on increasing both in absolute and relative terms. This is because of the combination of an increase in the overall debt between years T5 and T6 and the continued divergence of the regional shares in this overall debt between years T5 and T6.

An additional feature we added to year T6 is that it is the first year during which not only an overall primary surplus is achieved (row 4), but also an overall ***budget surplus*** (row 9). Because of this budget surplus, in year T6 a de facto start is made with paying off the debt. Total debt decreases from 88 at the beginning of year T6 (row 1) to 86.8 (= 88-1.2) at the beginning of year T7 (not shown). As said above, as soon as a start is made with paying down the debt, a new kind of transfer emerges (while transfers due to the interest burden keep flowing – and possibly even keep increasing as shown by the evolution from row 7 in table 7 to row 7 in table 8; and while "traditional" transfers have fallen back to zero in our example). This new kind of transfer -the transfer due to paying down the debt- is shown in row 12. It is calculated similarly to the transfer due to the interest burden, as shown in rows 10 and 11, as the difference between the part that a region ***actually*** takes in the debt paid down and the part that a region ***should*** take in the debt paid down on the basis of that region's share in total debt. So paradoxically, once a start is made with paying down the debt, transfers increase rather than decrease (in our example with 0.4 in year T6, plus with 0.6 due to increased interest transfers). This increase with 0.4 is due to the fact that Region A actually pays down a larger part of the debt than the part it should pay down on the basis of its share in the total debt. Of course, in a situation of repeated budget surpluses, total transfers will start to decrease, as the decrease in interest transfers due to the decrease of the debt burden will more than compensate the transfers caused by paying down the debt.

Table 8: T6: Both regions run a primary surplus, of the same size

T6		**Region A**	**Region B**	**Whole country**
1 = (1 in T5 - 4 in T5 + 6 in T5)	Debt (at **beginning** of period) (including interests due given share in debt in t-1)	11.4	76.6	88.0
2	Tax revenue collected	60	60	120
3	(Primary) spending received	55	55	110
4 = 2-3	Primary balance	5	5	10
5 = e.g. for Region A (60/120)*8.8	Interests actually paid	4.4	4.4	8.8
6 = (10% of 1)	Interests to pay given share in debt	1.1	7.7	8.8
7 = 5-6	**Transfers due to interest burden**	**3.3**	**-3.3**	**0**
8 = (7 as a share of last column of 5)	Interest transfers as share of interest burden	37%	-37%	0%
9 = 4-6	Budget balance (including interests due given share in debt)	3.9	-2.7	1.2
10 = e.g. for Region A (60/120)*1.2	Debt actually paid down	0.6	0.6	1.2
11 = e.g. for Region A (11.4/88)*1.2	Debt to pay down given share in debt	0.2	1.0	1.2
12 = 10-11	**Transfers due to paying down the debt**	**0.4**	**-0.4**	**0.0**
13 = 7+12	**Total transfers**	**3.7**	**-3.7**	**0.0**
10 = e.g. for Region A (60/105)*115	PM: Regional distribution of tax revenue assuming all spending would be tax funded	55	55	110
11 = 10-3	PM: Transfers calculated the traditional way	0	0	0
12 = (11 as a share of last column of 3)	PM: Transfers (the traditional way) as share of total (primary) spending	0%	0%	0%

III. Calculating Belgian interregional transfers due to the interest burden on the federal debt

Assumptions made:

1) Because we only have the necessary data from 1970 onwards, we can only calculate interest transfers from 1970 onwards. Our data source for regional shares in federal expenditures and revenues is Van Gompel (2004), which is in turn based on Van Rompuy and Bilsen (1988) and Dottermans (1997). These sources have calculated the interregional distribution of all federal revenues and expenditures through ***approximation*** of these distributions by:
    a. relevant regional population shares (e.g. share of the young with respect to school grants and child benefits, share of over 60 years old for retirement benefits)
    b. gross regional product (corrected for gross incomes of commuters to other regions so as to avoid an overestimation of the share of Brussels, the Belgian region with by far the largest share of employees living in another region) (e.g. for government purchases of goods and services and for VAT)
    c. gross regional value added (for the corporate income tax)
    d. number of employees weighted by gross wage bill and number of self-employed weighted by their value added (both for social security contributions).

    It should be noted that the federal government does not publish regionally disaggregated data on federal expenditures and revenues (let alone on regional primary balances). Exceptions are data on the region of residence of federal civil servants (allowing to distribute the federal public wage bill over the Belgian regions), regional shares in the personal income tax, regional shares in the number of unemployed, and regional shares in the federal grants to the Belgian Regions & Communities. Another exception are the so called "Regional accounts" of the NBB, which disaggregate geographically ***since 1995 only*** social security contributions and social expenditures, and which would enable us to approximate regional primary balances with regional differences between social security contributions and social expenditures. However, we prefer to use the data of Van Gompel because Van Gompel provides a regional disaggregation of federal revenues and expenditures ***as a whole*** for every single year ***between 1970 and 2002***, a period crucially encompassing the years of build-up of the large Belgian federal debt.
    We could have extended our sample period until 2010, as CERPE (2011) calculates regional primary balances for the 2006-2010 period[12], but because of possible different methodologies for the calculation of these primary balances, we have chosen not to. CERPE (2011) obtains smaller primary surpluses for Flanders over its period considered compared to the last years of our period, while obtaining larger primary deficits for Wallonia. We estimate that the size of the interregional interest transfers has broadly remained similar after 2002, in particular when expressing these transfers as a % of the total interest burden.

2) For the starting year 1970 we assume –due to lack of data for preceding years- that regional shares in the public debt equal regional shares tax revenue, i.e. we assume that the more a region contributed to tax revenue, the more it benefited from spending financed by borrowing, thereby avoiding interest transfers[13]. This is a conservative/prudent assumption, as Dottermans (1997) finds "traditional" transfers from Flanders to Wallonia already from 1964 onwards. Combined with the fact that the build-up of the Belgian public debt already started before 1970 (though rather slowly compared to the years after 1970), these "traditional" transfers imply a share of Flanders in the public debt that is lower than its share in tax revenue.
    However, as an extra robustness check, we have even more prudently assumed that in 1970 the share of Flanders in the public debt was 100%. This assumption of course reduces the interest transfers provided by Flanders since 1970 but they remain very large, e.g. when compared to interregional fiscal transfers in

[12] Likewise, Jennes (2012) calculated "traditional" interregional transfers for the 2007-2009 period.
[13] Assuming regional shares in tax revenue before 1970 were the same as in 1970.

Belgium according to previous traditional calculations. E.g. while the interest transfer out of Flanders is 5.6% of GDP (i.e. 14.6 billion euros) in 2002 –equalling 92% of the total interest bill- when assuming that in 1970 regional shares in the public debt equal regional shares in tax revenue, the resp. numbers are 3.6% of GDP (i.e. 9.4 billion nominal euros) and 59% when assuming that in 1970 the share of Flanders in the public debt was 100%. As a final robustness check, we have assumed that in 1970 total Belgian public debt was zero, i.e. that the build-up of the Belgian public debt only started in the year for which we have data on regional primary balances. Under this assumption the interest transfer out of Flanders is hardly lower than under our baseline assumption (regional shares in the public debt equalling regional shares in tax revenue): 5.1% of GDP (i.e. 13.3 billion euros) in 2002 –equalling 84% of the total interest bill.

3) We assume that the Belgian regions Flanders, Wallonia and Brussels were already relevant political actors in 1970. Indeed, it makes little sense to assign tax revenues and expenditures to geographical areas if those geographical areas do not simultaneously correspond to political institutions with responsibilities that potentially impact those revenues and expenditures[14]. We see 2 arguments to treat our 3 regions already as political actors from 1970 onwards.
Firstly, the 2 of the 3 major political parties in the history of Belgium (the Christian-democrats and the liberals) split up into a Flemish and a Francophone political party, resp. in 1971 and 1972. The 3rd major party, the socialist party, suffered from internal conflicts between Flemish and Francophone members throughout the 1970s, before also splitting up in 1978. This implied that from 1978s onwards, no single party represented in the federal parliament obtained votes nor even ran for elections both in Flanders and Wallonia[15]. Hence, we may broadly assume that from the start of our period, all Belgian political parties had an incentive to skew taxation and expenditure in favour of their region, exception made for the then still largely bilingual capital of Brussels.
Secondly, in 1970 a change of the constitution took place which established the 2 largest of the current 3 Belgian regions (Flanders and Wallonia, while Brussels obtained special status as the capital of Belgium), and also the current 3 Belgian communities (the Flemish, the Francophone and the German speaking communities). But in 1970 only the communities acquired responsibilities, moreover only with respect to culture, due to which the Belgian central government kept control over the bulk of revenue and expenditure[16]. The 3 regions only obtained substantial expenditure responsibilities at the occasion of the 1980 constitutional change, including economic competencies.
Therefore, as a robustness check, we have only started calculating interest transfers in 1980, assigning the public debt at the end of 1979 to the regions according to regional shares in tax revenue. This change of starting date for our calculations reduces the interest transfers provided by Flanders at the end of our period, but they remain very large, e.g. when compared to interregional fiscal transfers in Belgium according to previous traditional calculations. E.g. while the interest transfer out of Flanders is 5.6% of GDP (equalling 14.6 billion euros) in 2002 –equalling 92% of the total interest bill- when starting to assign the public debt according to regional shares in tax revenue in 1970, the resp. numbers are 4.4% of GDP (equalling 11.5 billion nominal euros) and 72% when starting to assign the public debt according to regional shares in tax revenue in 1980.

[14] Some object to calculating fiscal transfers between Belgian regions that e.g. Belgian provinces would be an equally relevant (or equally irrelevant, depending on one's view on calculating geographical fiscal transfers) geographical division. However, as opposed to Belgian regions, Belgian provinces hardly have competences, let alone economic competencies.
[15] With the exception of the electoral district of Brussels-Halle-Vilvoorde, where all parties represented in the federal parliament kept running. We know only of India as another democracy and federal country in which the federal government coalition sometimes consists to an important extent of parties that run for election only in one or a limited number of states. However, in India the limited geographical and cultural basis of political parties supporting the federal government does not hold for the largest parties, and also is a rather recent phenomenon, having come into existence only in the 1990s.
[16] With the exception of municipal taxation and expenditure.

4) As only data on regional shares in ***total*** tax revenue is available, we need to make the –minor- error to assume that the interest burden is paid out of ***total*** tax revenues, i.e. including social security contributions, while in fact, as social security contributions are earmarked to social security expenditures, the interest burden is paid out of tax revenues minus social security contributions. We may however assume that this additional assumption does not have a major impact on our results, as regional shares in social security contributions (residence basis) do not differ sufficiently from regional shares in tax revenues other than social security contributions, to considerably change our results.

Table 9 summarizes the method and the results of our calculations. As a first step, we have to calculate regional primary balances (expressed as a % of Belgian GDP) (columns 3), i.e. the differences between regional contributions to tax revenue (columns 1) and regionalized primary spending (columns 2) when we express columns 1 and 2 as a % of Belgian GDP. We notice that over our sample period, Flanders increases its share in tax revenue much more strongly than that it increases its share in primary spending. In contrast, the (negative) gap between Wallonia's share in tax revenue and its share in primary spending remains about constant over our sample period. Still different is Brussels, which evolves from a share in tax revenue that is larger than its share in primary spending to the inverse situation.

These contrasting evolutions of columns 1 and 2 (expressed as shares of total) result in ***even more*** contrasting primary balances (expressed as shares of GDP), precisely because total primary spending was considerably larger than total tax revenue during several years of our period considered. E.g. while the Flemish share in tax revenue was higher than its share in primary expenditures in any single year of our sample period, Flanders still ran a primary deficit in every single year before 1983. Likewise, while the Walloon share in tax revenue was lower than its share in primary expenditures in any single year of our sample period, Wallonia still ran a primary surplus from 1993 until and including 1997.

The Flemish primary balance is negative during the 1st subperiod that we are able to distinguish, 1970-1982[17], but turns positive during the next 2 subperiods we are able to distinguish, 1983-1994[18] and 1995-2002[19]. From 1986 onwards the Flemish surpluses are large enough to make the overall primary balance turn positive. But in particular the 3rd subperiod –which we distinguish because from 1995 onwards[20] also the overall ***budget*** balance (column 4) turns positive in several years- is marked by very large Flemish primary surpluses. In contrast, the Walloon primary balance remains negative over our entire period, except for the years 1993-1997 (and becomes very negative towards the end of the 1st subperiod). Brussels evolves broadly from primary surpluses in the 1st subperiod, over primary deficits in the 2nd subperiod, back to primary surpluses in the 3rd subperiod.

As a next step, we calculate regional –"caused"- shares in the total public debt (at the beginning of each year) (expressed as a % of Belgian GDP) (columns 6)[21]. Crucially, in each year, a region's debt share is calculated as the sum of its debt share at the beginning of the previous year, its primary deficit run over the previous year (or the opposite

[17] This 1st subperiod broadly corresponds to years T1 and T2 of our numerical example (tables 3 and 4).
[18] The 1983-1994 subperiod was preceded by the December 1981 elections, which resulted in a coalition change, resulting in turn in a prolonged fiscal consolidation effort until 1987. This 2nd subperiod broadly corresponds to years T3 and T4 of our numerical example (tables 5 and 6).
[19] This 3rd subperiod broadly corresponds to years T5 of our numerical example (table 7).
[20] In 1992 a new government took office, starting a prolonged budget consolidation in view of accession to the euro zone. This government was re-elected in 1995.
[21] In columns 6 we also show ***total*** Belgian debt as a share of Belgian GDP. Remarkably, from 1970 until 1976 the share of total Belgian debt in GDP steadily decreases despite the steadily worsening Belgian primary balance in columns 3. This paradox is explained by the relatively strong nominal economic growth and relatively low nominal interest rates over this period. Conversely, columns 6 show that the public debt continued to increase from 1985 until 1993 despite a positive and increasing primary balance (columns 3). This paradox is explained by the relatively weak nominal economic growth and relatively high nominal interest rates over this period. However, in nominal euros total Belgian public debt increased steadily over our entire period considered.

of its primary surplus in case of a primary surplus), and its –"caused"- share in the interests that are due in the previous year. The latter simply corresponds to its debt share in the previous period (expressed in % of total debt) multiplied by the total interest burden (columns 7)[22]. Hence, when having calculated –"caused"- regional debt shares for a particular year, we can easily calculate –"caused"- regional interest burden shares for that same year. In other words the regional "caused" debt shares are the debts the resp. regions would have accumulated under the assumption that the 3 regions would have been independent countries from the start of our period considered. Note that from 1987 onwards the Flemish share in total debt (expressed as a % of Belgian GDP) (columns 6) starts to decrease (while total debt continues to increase until 1993), as a consequence of the ever growing Flemish primary surplus. Also note that from 1986 onwards the Flemish "caused" share in the interest burden (expressed as a % of Belgian GDP) (columns 7) starts to decrease (while the total interest burden continues to increase until 1990), as a consequence of the decreasing Flemish debt share.

The last but one step is then to calculate regional interest shares not on a "caused" but on a de facto "paid" basis (columns 8), i.e. simply according to regional shares in tax revenue (columns 1). Note that the Flemish interest bill –on a "paid" basis"- starts to decrease later than the Flemish "caused" interest bill, and that it also decreases more slowly.

The difference between the "caused" and "paid" interest shares then corresponds to interregional interest transfers (columns 9). Columns 10 simply express columns 9 as a share of the total annual interest bill. Columns 9 and 10 show that the interest transfers from Flanders -to Wallonia over our entire period, and to Brussels from 1990 onwards- are positive and increasing over our entire period. At the end of our period, interest transfers from Flanders almost equal the entire interest bill. In nominal euros interest transfers out of Flanders have increased from 9.2 billion in 1995 to 14.6 billion in 2002. Note that Brussels is a far smaller region than Wallonia, which partly explains why interest transfers to Brussels are far smaller than those to Wallonia. The large interest transfers from Flanders to Wallonia and Brussels are the combined effect of the rather small part of the interest bill effectively paid by Wallonia and Brussels (columns 8), which is due to their rather small (and decreasing) share in total tax revenue (columns 1), and –much more importantly- the very large part of the interest bill Wallonia and Brussels should have paid (columns 7) on the basis of their shares in total debt (columns 6).

At the end of our period interest transfers from Flanders are more than double the amount of transfers calculated in a number of studies undertaken during the previous decade. (see e.g. Algoed 2008) These studies assumed that all expenditures were tax funded, i.e. that there was a total primary balance of zero[23] (as correctly pointed out by Algoed (2009 p. 8)). In a nutshell, the difference between interest transfers and "traditional" transfers is large because regions –at least in Belgium- differ much more in terms of their primary balances as a % of GDP than in terms of the difference between their ***shares*** in total expenditure and their ***shares*** in total tax revenue. (see columns 1 until 3 of table 9)

Columns 6 of table 9 show that from 2001 onwards, and due to the successive primary deficits of Wallonia over our entire period –i.e. due to its persistent debt accumulation-, Wallonia's regionalized debt is even larger than total Belgian debt. As a consequence, columns 7 show that the interest bill Wallonia should pay is even larger than the total interest bill. These facts are precisely explained by the facts that at the same end of our period the Flemish share in the public debt has become negative, and hence also its part of the interest bill it should pay. In other words, the successive primary surpluses of Flanders since 1983 have enabled it to pay down its entire debt accumulated before 1983, and have even enabled Flanders to accumulate –intra-Belgian- savings from 1998

[22] Hence a region's "caused" interest amount in year t-1 in columns (6) returns as a component of a region's "caused" debt amount in year t in columns 5.

[23] We also have found such a traditional calculation of interregional fiscal transfers for Canada, i.e. between Canadian provinces. (Bird and Vaillancourt 2007) This study explicitly acknowledges that it assumes that the Canadian federal budget had been balanced in every year for which it calculates interregional transfers.

onwards, savings which have generated –intra-Belgian- interest income to the benefit of Flanders rather than an interest bill to be paid by Flanders. Still otherwise stated: the savings of Flanders on the one hand and the Walloon debt which is even larger than the total Belgian debt on the other hand are 2 sides of the same coin. The Walloon "surplus debt" is precisely made possible by the Flemish savings. As a consequence, we estimate that shortly after the end of our period, interest transfers have increased to more than 100% of the total interest bill.

Finally it is striking from table 9 that absolute and relative interest transfers keep strongly increasing even:

- after 1991, the year in which the total interest bill (expressed as a % of GDP) starts to decrease,
- after 1993, the year in which the combined primary balance of Wallonia and Brussels turns positive (columns 3),
- after 1995, the year in which the budget balance turns positive in several years (columns 4).

The effects of these 3 evolutions are more than compensated by the divergent evolution of regional primary balances (columns 3) that continues after 1991.

Table 9: Calculation of interregional interest transfers in Belgium (1970-2002) (in % of Belgian GDP, unless stated otherwise)

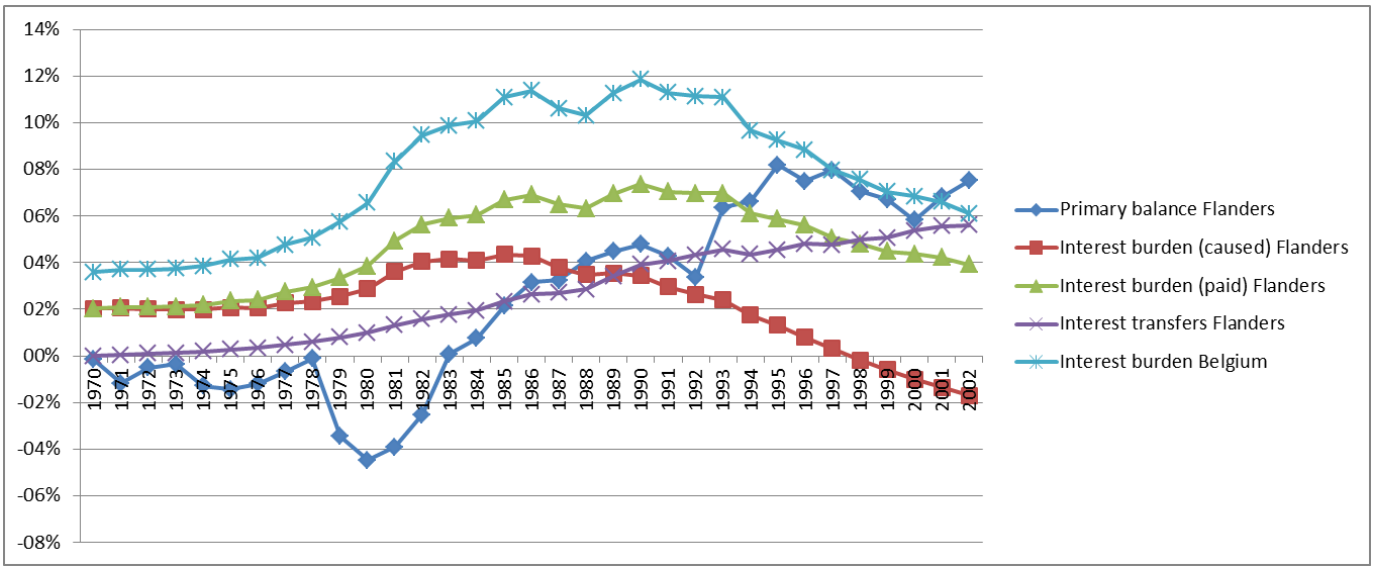
Year	Share in tax revenue (1)				Share in public spending (2)				Primary balance (3)				BB* (4)	IR** (5)	Public debt (caused) (6)				Interest burden (caused) (7)				Interest burden (paid) (8)				Interest transfers (9)				As a share of interest burden (10)			
	BE	FL	WA	BR	BE	FL	WA	BR	BE	FL	WA	BR	BE	BE	BE	FL	WA	BR	BE	FL	WA	BR	BE	FL	WA	BR	FL	WA	BR	BE	FL	WA	BR	BE
1970	100%	57%	31%	13%	100%	54%	35%	11%	-1.7%	-0.1%	-2.0%	0.4%	-5.3%	7.4%	65.0%	36.7%	20.0%	8.3%	3.6%	2.0%	1.1%	0.5%	3.6%	2.0%	1.1%	0.5%	**0.0%**	0.0%	0.0%	0.0%	0%	0%	0%	0%
1971	100%	57%	31%	13%	100%	54%	35%	11%	-3.7%	-1.2%	-2.7%	0.2%	-7.4%	6.2%	64.2%	35.6%	21.1%	7.6%	3.7%	2.1%	1.2%	0.4%	3.7%	2.1%	1.1%	0.5%	**0.0%**	-0.1%	0.0%	0.0%	1%	-2%	1%	0%
1972	100%	57%	31%	13%	100%	54%	35%	11%	-2.5%	-0.5%	-2.4%	0.4%	-6.2%	6.4%	63.9%	34.6%	22.3%	6.9%	3.7%	2.0%	1.3%	0.4%	3.7%	2.1%	1.1%	0.5%	**0.1%**	-0.2%	0.1%	0.0%	2%	-4%	2%	0%
1973	100%	57%	31%	13%	100%	54%	35%	11%	-2.2%	-0.3%	-2.4%	0.6%	-5.9%	6.7%	61.7%	32.7%	22.9%	6.1%	3.7%	2.0%	1.4%	0.4%	3.7%	2.1%	1.2%	0.5%	**0.1%**	-0.2%	0.1%	0.0%	4%	-6%	3%	0%
1974	100%	57%	31%	12%	100%	54%	35%	10%	-4.1%	-1.3%	-3.2%	0.4%	-8.0%	7.3%	57.6%	29.8%	22.7%	5.0%	3.8%	2.0%	1.5%	0.3%	3.8%	2.2%	1.2%	0.5%	**0.2%**	-0.3%	0.1%	0.0%	5%	-9%	4%	0%
1975	100%	57%	31%	12%	100%	54%	35%	10%	-4.7%	-1.4%	-3.6%	0.3%	-8.8%	7.9%	59.3%	30.0%	24.8%	4.5%	4.1%	2.1%	1.7%	0.3%	4.1%	2.4%	1.3%	0.5%	**0.3%**	-0.5%	0.2%	0.0%	7%	-11%	5%	0%
1976	100%	57%	30%	12%	100%	54%	35%	10%	-4.4%	-1.2%	-3.4%	0.2%	-8.6%	8.0%	59.9%	29.4%	26.4%	4.0%	4.2%	2.1%	1.8%	0.3%	4.2%	2.4%	1.3%	0.5%	**0.3%**	-0.6%	0.2%	0.0%	8%	-14%	5%	0%
1977	100%	58%	30%	12%	100%	54%	35%	11%	-3.8%	-0.7%	-3.3%	0.2%	-8.5%	8.6%	63.4%	30.2%	29.4%	3.8%	4.8%	2.3%	2.2%	0.3%	4.8%	2.7%	1.4%	0.6%	**0.5%**	-0.8%	0.3%	0.0%	10%	-16%	6%	0%
1978	100%	58%	30%	12%	100%	55%	35%	11%	-2.9%	-0.1%	-3.0%	0.1%	-8.0%	8.6%	67.0%	30.9%	32.4%	3.7%	5.1%	2.3%	2.4%	0.3%	5.1%	2.9%	1.5%	0.6%	**0.6%**	-0.9%	0.3%	0.0%	12%	-18%	6%	0%
1979	100%	58%	30%	12%	100%	55%	35%	11%	-9.3%	-3.5%	-5.2%	-0.7%	-15.0%	9.2%	70.1%	31.2%	35.4%	3.6%	5.8%	2.6%	2.9%	0.3%	5.8%	3.4%	1.7%	0.7%	**0.8%**	-1.2%	0.4%	0.0%	14%	-20%	6%	0%
1980	100%	59%	30%	11%	100%	55%	34%	11%	-11.2%	-4.5%	-5.7%	-1.0%	-17.8%	10.2%	78.3%	34.2%	40.0%	4.2%	6.6%	2.9%	3.4%	0.4%	6.6%	3.9%	2.0%	0.7%	**1.0%**	-1.4%	0.4%	0.0%	15%	-21%	6%	0%
1981	100%	59%	30%	11%	100%	55%	34%	11%	-10.3%	-3.9%	-5.4%	-1.1%	-18.7%	11.2%	91.6%	39.6%	46.7%	5.3%	8.3%	3.6%	4.3%	0.5%	8.3%	4.9%	2.5%	0.9%	**1.3%**	-1.8%	0.4%	0.0%	16%	-21%	5%	0%
1982	100%	59%	30%	11%	100%	55%	34%	11%	-8.1%	-2.5%	-4.6%	-0.9%	-17.5%	11.2%	101.9%	43.5%	52.1%	6.3%	9.5%	4.0%	4.8%	0.6%	9.5%	5.6%	2.8%	1.0%	**1.6%**	-2.0%	0.4%	0.0%	17%	-21%	5%	0%
1983	100%	60%	30%	11%	100%	55%	34%	11%	-3.6%	**0.1%**	-3.1%	-0.6%	-13.5%	10.3%	112.8%	47.3%	58.1%	7.4%	9.9%	4.1%	5.1%	0.7%	9.9%	5.9%	2.9%	1.1%	**1.8%**	-2.2%	0.4%	0.0%	18%	-22%	4%	0%
1984	100%	60%	29%	10%	100%	55%	34%	11%	-2.6%	**0.7%**	-2.7%	-0.6%	-12.7%	9.6%	116.9%	47.6%	61.3%	8.0%	10.1%	4.1%	5.3%	0.7%	10.1%	6.0%	3.0%	1.1%	**2.0%**	-2.3%	0.4%	0.0%	19%	-23%	4%	0%
1985	100%	60%	29%	10%	100%	55%	33%	11%	-0.3%	**2.1%**	-1.9%	-0.5%	-11.3%	10.1%	121.8%	47.9%	65.2%	8.8%	11.1%	4.4%	5.9%	0.8%	11.1%	6.7%	3.2%	1.1%	**2.3%**	-2.7%	0.3%	0.0%	21%	-24%	3%	0%
1986	100%	61%	29%	10%	100%	55%	33%	11%	**1.4%**	**3.2%**	-1.3%	-0.4%	-10.0%	9.8%	127.2%	47.9%	69.8%	9.6%	11.4%	**4.3%**	6.2%	0.9%	11.4%	6.9%	3.3%	1.1%	**2.6%**	-2.9%	0.3%	0.0%	23%	-26%	3%	0%
1987	100%	61%	29%	10%	100%	55%	33%	11%	**1.3%**	**3.2%**	-1.4%	-0.6%	-9.3%	8.7%	131.6%	**47.0%**	74.2%	10.4%	10.6%	**3.8%**	6.0%	0.8%	10.6%	6.5%	3.1%	1.1%	**2.7%**	-2.9%	0.2%	0.0%	25%	-27%	2%	0%
1988	100%	61%	29%	10%	100%	56%	33%	12%	**2.7%**	**4.1%**	-0.8%	-0.5%	-7.6%	8.4%	131.6%	**44.4%**	76.2%	11.1%	10.3%	**3.5%**	6.0%	0.9%	10.3%	6.3%	3.0%	1.0%	**2.9%**	-3.0%	0.1%	0.0%	28%	-29%	1%	0%
1989	100%	62%	29%	9%	100%	56%	33%	12%	**3.5%**	**4.5%**	-0.5%	-0.5%	-7.7%	9.3%	127.6%	**40.2%**	76.1%	11.4%	11.3%	**3.5%**	6.7%	1.0%	11.3%	7.0%	3.2%	1.1%	**3.4%**	-3.5%	0.1%	0.0%	30%	-31%	1%	0%
1990	100%	62%	29%	9%	100%	56%	32%	12%	**3.8%**	**4.8%**	-0.4%	-0.6%	-8.0%	9.8%	127.7%	**37.0%**	78.6%	12.2%	11.8%	**3.4%**	7.3%	1.1%	11.8%	7.4%	3.4%	1.1%	**3.9%**	-3.9%	0.0%	0.0%	**33%**	-33%	0%	0%
1991	100%	62%	29%	9%	100%	56%	33%	11%	**3.0%**	**4.3%**	-0.7%	-0.6%	-8.3%	9.2%	129.8%	**34.1%**	82.5%	13.3%	**11.3%**	**3.0%**	7.2%	1.2%	11.3%	**7.0%**	3.2%	1.0%	**4.1%**	-3.9%	-0.1%	0.0%	**36%**	-35%	-1%	0%
1992	100%	63%	29%	9%	100%	56%	33%	11%	**1.3%**	**3.4%**	-1.2%	-0.9%	-9.8%	9.0%	131.2%	**31.2%**	85.8%	14.3%	**11.1%**	**2.6%**	7.3%	1.2%	11.1%	**7.0%**	3.2%	1.0%	**4.3%**	-4.1%	-0.3%	0.0%	**39%**	-37%	-2%	0%
1993	100%	63%	29%	9%	100%	56%	33%	11%	**6.4%**	**6.4%**	0.3%	-0.3%	-4.7%	8.6%	138.0%	**29.8%**	92.2%	16.1%	**11.1%**	**2.4%**	7.4%	1.3%	11.1%	**7.0%**	3.2%	0.9%	**4.6%**	-4.2%	-0.3%	0.0%	**41%**	-38%	-3%	0%
1994	100%	63%	28%	8%	100%	57%	33%	10%	**6.8%**	**6.6%**	0.3%	-0.1%	-2.9%	7.3%	**136.4%**	**24.7%**	95.0%	16.8%	**9.7%**	**1.7%**	6.7%	1.2%	9.7%	**6.1%**	2.7%	0.8%	**4.4%**	-4.0%	-0.4%	0.0%	**45%**	-41%	-4%	0%
1995	100%	63%	28%	8%	100%	57%	33%	10%	**9.4%**	**8.2%**	1.1%	0.1%	**0.1%**	7.1%	**133.4%**	**19.0%**	97.1%	17.4%	**9.2%**	**1.3%**	6.7%	1.2%	9.2%	**5.9%**	2.6%	0.8%	**4.5%**	-4.1%	-0.4%	0.0%	**49%**	-45%	-5%	0%
1996	100%	63%	28%	8%	100%	57%	33%	10%	**8.1%**	**7.5%**	0.6%	0.0%	**-0.7%**	6.8%	**130.1%**	**11.8%**	100.4%	18.0%	**8.8%**	**0.8%**	6.8%	1.2%	8.8%	**5.6%**	2.5%	0.7%	**4.8%**	-4.3%	-0.5%	0.0%	**54%**	-49%	-6%	0%
1997	100%	64%	28%	8%	100%	57%	33%	10%	**8.7%**	**8.0%**	0.6%	0.2%	**0.7%**	6.4%	**124.7%**	**4.9%**	101.6%	18.3%	**8.0%**	**0.3%**	6.5%	1.2%	8.0%	**5.1%**	2.2%	0.7%	**4.8%**	-4.3%	-0.5%	0.0%	**60%**	-53%	-6%	0%
1998	100%	64%	28%	8%	100%	57%	33%	10%	**7.1%**	**7.1%**	-0.1%	0.1%	**-0.4%**	6.3%	**119.3%**	**-2.7%**	103.5%	18.6%	**7.5%**	**-0.2%**	6.5%	1.2%	7.5%	**4.8%**	2.1%	0.6%	**5.0%**	-4.4%	-0.5%	0.0%	**66%**	-59%	-7%	0%
1999	100%	64%	28%	8%	100%	57%	33%	10%	**6.7%**	**6.7%**	-0.1%	0.1%	**-0.4%**	6.1%	**115.0%**	**-9.5%**	105.7%	18.9%	**7.0%**	**-0.6%**	6.5%	1.2%	7.0%	**4.5%**	2.0%	0.6%	**5.1%**	-4.5%	-0.6%	0.0%	**72%**	-64%	-8%	0%
2000	100%	64%	28%	8%	100%	57%	33%	10%	**5.0%**	**5.8%**	-0.8%	0.0%	**-1.8%**	6.3%	**109.5%**	**-16.0%**	106.6%	19.0%	**6.8%**	**-1.0%**	6.7%	1.2%	6.8%	**4.4%**	1.9%	0.6%	**5.4%**	-4.8%	-0.6%	0.0%	**78%**	-69%	-9%	0%
2001	100%	64%	28%	9%	100%	57%	33%	10%	**6.6%**	**6.8%**	-0.4%	0.2%	**0.0%**	6.2%	**108.7%**	**-22.2%**	111.3%	19.7%	**6.6%**	**-1.3%**	6.8%	1.2%	6.6%	**4.2%**	1.8%	0.6%	**5.6%**	-4.9%	-0.6%	0.0%	**84%**	-75%	-10%	0%
2002	100%	64%	28%	8%	100%	57%	33%	9%	**7.7%**	**7.5%**	0.0%	0.2%	**1.6%**	5.7%	**106.1%**	**-29.7%**	115.6%	20.2%	**6.1%**	**-1.7%**	6.6%	1.2%	6.1%	**3.9%**	1.7%	0.5%	**5.6%**	-5.0%	-0.7%	0.0%	**92%**	-81%	-11%	0%

* Belgian budget balance (% of GDP)

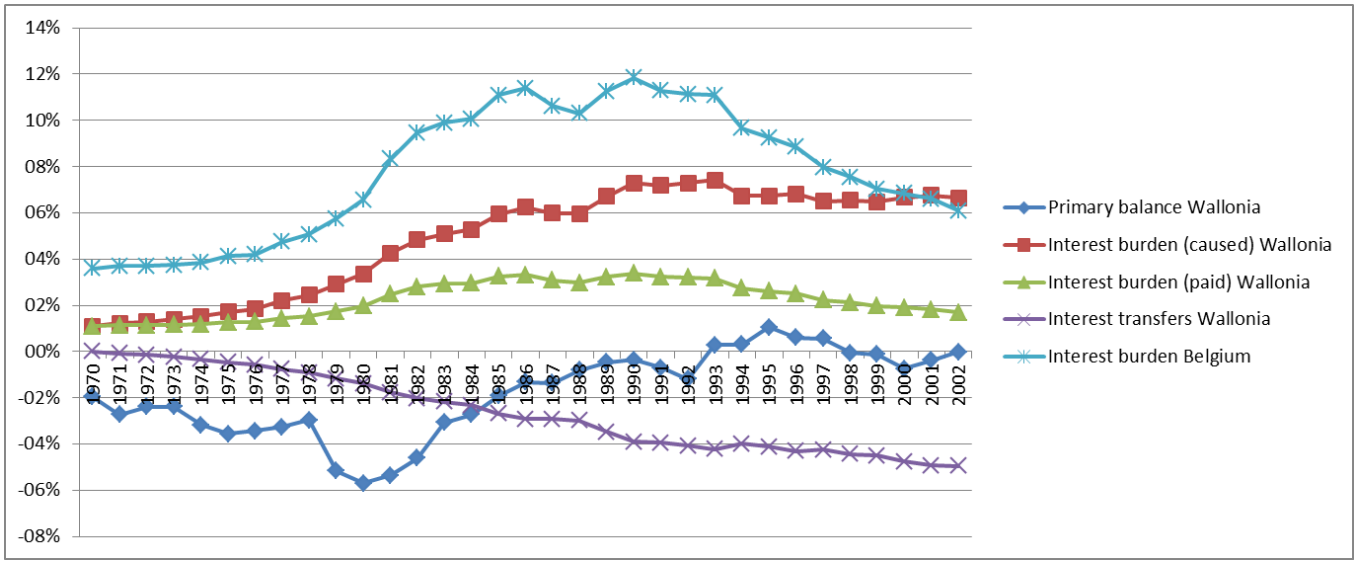
** Implicit interest rate, i.e. interest burden in year t as a share of Belgian public debt in year t-1 (%)

Graphs 1 and 2 present the major numbers of table 9, for Flanders and Wallonia resp. We do not show the situation of Brussels graphically, because of its smaller fiscal impact[24].

Graph 1: Interest transfers from Flanders compared to the total interest burden (% of Belgian GDP)



Graph 2: Interest transfers to Wallonia compared to the total interest burden (% of Belgian GDP)



[24] However, relatively speaking, the fiscal situation of Brussels may be considered as worse than Wallonia: apart from Berlin, Brussels is the only capital city of the EU15 countries not generating fiscal transfers towards the rest of the country. On the contrary, the rest of Belgium –Flanders, to be more precise- generates fiscal transfers to Brussels, which translates into interest transfers to Brussels in columns 8 of table 9.

IV. The political economics of interregional interest transfers in Belgium

An established theoretical finding in political economics is that a political party in power seems to benefit a priori from a budget deficit, along the line of reasoning of Persson and Tabellini (2000 p. 345-372), with additional reference to Lizzeri (1999 p. 909-912) and Besley (2006 p. 210-211). This is because in the ***current*** legislature, an incumbent political party should expect to benefit electorally from an expenditure increase. This is the traditional common pool problem: taxation is general but expenditures can be targeted. But this benefit is even larger if the incumbent political party avoids to finance the expenditure increase with a tax increase –this is another kind of common pool problem, i.e. between the current legislature and future legislatures[25]. In Persson and Tabellini (2000 p. 345)'s wording: poor definition of property rights to ***both current and future*** tax revenues (or non-internalisation of the cost of borrowing in terms of future spending cuts) gives the incumbent parties not only an incentive to spend ***a lot*** but also to spend ***soon***. Otherwise stated: debt financing arises because an incumbent party is generally ***not certain*** to be part of the governing coalition during the ***next*** legislature[26]. This uncertainty –to be understood as the expectation that power alternates randomly between a party in power and its competitor(s)-not only gives the party in power an incentive for re-election improving deficit spending ***now***, but it also means that it may be exempted from bearing the ***future*** costs of current deficit financing[27].

Being in power even without running a deficit already enables a party to favour its constituency with extra expenditures. But debt financing ***increases*** the room for such ***current*** extra expenditures to be targeted to a party's constituency. Moreover, at the same time it limits the room for ***future*** extra expenditures to be targeted to a competitor party's constituency, in case a competitor party gets elected instead of the incumbent. (Alesina and Perotti 1994 p. 17) This asymmetry may be an additional reason why, within any coalition government, those coalition members wishing to prevent a budget deficit –which could be those coalition members that can be quite sure of being part of the next

[25] Over our period studied the major coalition members that were least sure of being part of the next Belgian federal government –and that hence had a greater interest in debt accumulation during their coalition participation- were both Flemish and Francophone liberal-conservative parties. This is a paradox as rather rightwing parties are mostly associated with fiscal discipline. Over our period studied the liberal-conservative parties were ***only*** part of the federal coalition during the 1974-77, 1982-87, and 1999-2003 legislatures. Both Christian-democratic parties were ***always*** part of the governing coalition except from 1999 onwards. Both socialist parties were ***always*** part of the governing coalition except during the 1974-77 and 1982-87 legislatures. (One critique to our definition of uncertainty as "years of past coalition participation" is that parties may not have been able to assess this number of years ***ex ante***.) Also, the coalitions including the liberal-conservatives were "minimal winning coalitions", i.e. were supported by tight majorities in parliament: the 1974-77 government was supported by only 53% of parliamentary seats, while the 1982-85 and the 1985-87 governments –supported by 53% resp. 54% of parliamentary seats- did not even have the support of the majority of the Francophone seats. Moreover, in the 1981 elections the Christian-democrats lost heavily (while still remaining in power) and in the 1985 elections the liberal-conservatives lost heavily (while still remaining in power). An exception is the 1999-03 government, which was a large coalition. While the 1974-77 and 1999-2003 legislatures were characterized by loose fiscal policy, the 1982-87 legislatures were characterized by considerable fiscal consolidation efforts. This is a paradox given the statement of Alesina and Drazen (1988 p. 25) that successful stabilisations may be expected after elections with a clear winner. Interestingly, the fiscal loosening up after 1999 implemented by a coalition including the liberal-conservatives consisted to an important extent of the 2001 tax decrease. Hence we should understand "a debt funded expenditure increase" to possibly take the shape of a ***targeted tax decrease*** not compensated by a tax increase elsewhere. Between 1999 and 2010 Didier Reynders was without interruption the Francophone liberal finance minister of Belgium. The opposition suspected him during his entire ministership not to care as much about a balanced budget as about targeted tax reductions for his –liberal-conservative- constituency. During his reign there were few years with a budget surplus, and the primary surplus strongly decreased.

[26] In fact, Alesina and Tabellini (1987) already came to this result.

[27] Persson and Tabellini (2000 p. 367) note that uncertainty of re-election is higher for coalition governments than for single party governments.

government[28]- may face a more difficult task than those coalition members wishing to elicit a debt-funded expenditure increase – which could be those coalition members that are less sure of being part of the next government.

However, there could not only be Persson and Tabellini's ***group - time*** dimension to political economy motives for debt financing –typically unified governments with more or less polarized preferences more or less quickly alternating over time, i.e. more or less political instability-, but also a ***group - space*** dimension –typically more or less ***internally*** fragmented or decentralised governments at any given point in time, i.e. more or less political fragmentation[29]. Such a distinction is made by Roubini and Sachs (1989 p. 909)[30] and by Alesina and Tabellini (1992 p. 342). Roubini and Sachs (1989) also explicitly ***analyse*** the consequences of the group - space dimension for budget deficits, and essentially find that the more parties make up a coalition government, the higher the budget deficits are[31]. They view avoiding deficits as a prisoner's dilemma: all parties may prefer a balanced budget, but in the absence of strong coordination between them to achieve such a cooperative outcome, each party may have an incentive to protect and expand "its" part of the budget. Additionally, while cooperation of ***all*** coalition partners may be needed to avoid a deficit, non-cooperation by ***one*** of them may suffice to cause a deficit[32].

With respect to the –more complex- group - space dimension to political economy motives for ***central government*** debt financing in Belgium, it is important to note that Belgian political parties are linguistically and hence largely geographically split. This split narrows political parties' mandates and disperses their power over fiscal policy more than in other systems of coalition governments. Otherwise stated: such a split increases the number of veto rights over fiscal policy, in the wording of Persson and Tabellini (2000 p. 345). It should be admitted that also in some other countries there is a strong correlation between regions and political parties, such as the UK (Tories collecting mostly votes in the south, Labour mostly collecting votes in the north) and India (perhaps resembling Belgium the most, as several parties represented in the Indian parliament only collect votes in one particular state). But what is typical of Belgium is that 1) ***all*** of its parties are regional and 2) the constitution ***guarantees*** all 3 Belgian regions representation within the

[28] Most post-war central governments in Belgium were coalitions between Christian-democrats and socialists. Since the 1970s, when all major Belgian parties split in a Flemish and a Francophone wing, this has implied government coalitions of at least 4 parties.

[29] Note in what follows that the uncertainty aspect that is important to the group - time dimension to political economy motives for debt financing is no longer present within the group - space dimension to political economy motives for debt financing.

[30] Roubini and Sachs (1989 p. 909) additionally point at the ***relationship*** between the group – time and the group – space dimension: the higher the uncertainty of re-election of a governing coalition, the higher polarisation and fragmentation within the governing coalition. From game theory, we know that cooperation is easier to maintain if the expected time horizon over which agents interact is longer.

[31] However, de Haan and Sturm (1997) have replicated Roubini and Sachs' (1989) research, and have failed to find a relationship between government fragmentation and budget deficits.

[32] While Roubini and Sachs (1989) analyse the political economy drivers of debt financing by ***central governments***, many more studies are available on the political economy drivers of debt financing of ***lower level governments***. Rodden (2005 p. 181-221) finds for German states characterized by partisan alignment with CDU and/or SPD over the 1978-1996 period that they ran higher deficits, and expected to receive –explicit or implicit- bailout grants as a consequence of these deficits. Similarly, Khemani (2007) finds for Indian states characterized by partisan alignment with the leading party in the central government over the 1972-1998 period that they ran higher deficits. A more common and better known finding of empirical research than the effect of partisan alignment on lower level government deficits is that grants-based fiscal federalism –and more generally the availability of grants financing by the central government- leads to higher deficits of lower level governments, again anticipating –explicit or implicit- bailout grants. (see Pettersson-Lidbom 2010 for Sweden; Baskaran 2012 for Germany; and Sorribas-Navarro 2011 for Spain)

government. The additional potential consequences of such a "Belgian" setting for debt accumulation are nowhere acknowledged in the literature on the political economy of budget deficits[33].

The uncertainty aspect that is important to the group - time dimension to political economy motives for debt financing is no longer present within the group - space dimension to political economy motives for debt financing, at least not within the group – space dimension ***in Belgium***. By law a Belgian federal government needs to consist of ministers proposed by Flemish and by Francophone parties in a 50-50% proportion (while about 60% of Belgian population is Flemish). Therefore, it seems rather typical of Belgium that such polarization may well exist ***within the governing coalition itself***, rather than ***between governing and opposition parties*** as analysed by Persson and Tabellini[34] (2000 p. 354).

One could state that what is typical of Belgium –compared to other countries in which parties and regions overlap to some extent- that what its institutional setup ***eliminates*** in terms of ***uncertainty*** of regions to be represented in the federal government, this same setup ***adds*** in terms of regional ***polarisation*** within this same federal government. This polarisation is rather high since the Flemish and Francophone parties' resp. electoral districts -Flanders and Francophone Belgium[35]- are rather heterogeneous in expenditure preferences, largely due to their heterogeneous perception of socio-economic and demographic needs. Similar to Alesina and Perotti (1994 p. 17) and Persson and Tabellini (2000 p. 354)'s reasoning, such polarized party preferences provide an additional incentive to those parties only collecting votes in Wallonia and Brussels to make the federal government run a deficit and to steer the resulting extra expenditures to their electoral districts, as our above calculations show that debt-financing is cheaper in fiscal terms for Wallonia and Brussels than for Flanders[36].

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[33] E.g. in their study of political-economy drivers of the budget deficit Roubini and Sachs (1989 p. 908) simply classify Belgium as another system of "multi-party coalitions with short tenure", in the same category as e.g. Denmark and the Netherlands, although elsewhere (p. 930) they put forward the case of Belgium "with weak coalition governments with parties that are divided along linguistic and geographical lines as well as ideological lines" as a case study meriting further research.

[34] Next to the degree of uncertainty of being part of the next government, political polarization, fragmentation, and instability have been found to increase the deficit (see Alesina and Perotti 1994 and Persson and Tabellini 2000). Roubini and Sachs (1989) have demonstrated that large, short-lived and uncohesive coalition governments lead to large deficits. These factors also seem to explain the large public debt accumulated by the Belgian federal government, but they simultaneously seem indistinguishably related to Belgian geographical polarization. While over our period studied there were 10 federal elections –i.e. on average 1 election per 3 years while a legislature in Belgium lasts 4 years-, there were no less than 20 governments –i.e. on average 1 government per 1.5 year. Moreover, between 1970 and 1981 there were no less than 5 elections –on average one every 2.4 years– and no less than 12 governments, most of which were dissolved prematurely because of institutional conflicts between Flemish and Francophone parties. The 1970-1981 subperiod corresponds to our 1st subperiod in table 9, marked by a mounting primary deficit, a mounting budget deficits, a mounting public debt, a mounting interest burden, and a primary deficit even for Flanders. (However, remarkably there were only 2 elections and 2 government dissolutions which led to a change in coalition composition during this period: in 1974 when the Christian-democrats exchanged the socialists for the liberals as coalition partners, and in 1977 when the reverse happened. Hence perhaps the number of governments and elections during this period exaggerates political instability.

[35] Over our period studied, the number of voters voting for Flemish parties in the Brussels Region has continually decreased. During the 2014 elections for the Brussels Parliament, all Flemish parties together obtained 11.35% of the vote. We therefore will consider the Brussels region as part of Francophone Belgium in the remainder of our paper.

[36] Therefore, a path of further research could be to test empirically for a panel of countries if large interregional fiscal and income disparities –possibly in combination with high political polarization and fragmentation- lead to large deficits, possibly adding other important political-economy explanations of variation in deficits to the ones already found by Persson and Tabellini (2003 p. 179-183) in an empirical follow-up to their 2000 classic. A potential problem with such a panel analysis is that our independent variables of interest are not expected to vary considerably over time. This is illustrated for Belgium by the rather stable regional expenditure and revenue shares over time that are visible from columns 1 and 2 of table 9. Additionally, such independent variables may be

In Persson and Tabellini (2000 p. 345)'s wording one could describe the Belgian common pool problem between the Flemish and the Francophone Belgian parties as a poor definition of Flanders' property rights over federal tax revenue. In Belgium, different geographical consequences of debt financing overlap to a large extent with different intra-coalition consequences of debt financing (see Alesina and Perotti 1994 p. 22-26 for distributional conflicts with respect to debt financing within a coalition).

Debt financing may be cheaper for Wallonia and Brussels not only in fiscal terms but also in broader economic terms: as the private sector is larger in Flanders than in Wallonia and Brussels combined, a worsening of the macro-economy due to mounting debt may be predominantly felt in Flanders. Moreover economic spill-overs between Flanders and Wallonia are limited in important respects[37].

Additionally, the relatively lower cost of deficit finance for Wallonia provides it with an incentive not only to let the federal government accumulate debt but also to ***postpone fiscal consolidation***. Alesina and Drazen (1989) model consolidation postponement –i.e. postponement of ***agreement on the burden sharing*** of consolidation- as a war of attrition, in which the party that bears most of the cost of postponement (in our case Flanders) eventually gives in, in that it also bears most of the cost of consolidation. From columns 3 of table 9 it is clear that after the coming to power of a turnaround government in 1981 the primary balance of Flanders improved more strongly than the primary balance of Wallonia. The Flemish primary balance improved from its lowest point of -4.5% of Belgian GDP in 1980 to 3.2% in 1987 (i.e. with 7.7%points), while the resp. numbers for Wallonia were -5.7 and -1.4% (i.e. an improvement of 4.3%points).

However, an alternative reasoning could be that Wallonia and Brussels have an incentive to provoke a federal budget deficit exactly because they may anticipate to be largely exempted from fiscal consolidation. This is because Wallonia and -since the 1990s- also Brussels are poorer than Flanders, due to which Francophone parties could anticipate that a tax increase –in particular of the personal income tax and of social security contributions- will probably result in a relatively larger revenue increase originating in Flanders than originating in the rest of Belgium. In Belgium, consolidation seems to have a higher chance to be revenue based because of the dominance of PS in Belgian politics. PS is the Francophone socialist party, which has been part of all federal coalitions over our sample period, except between 1974 and 1977 and between 1982 and 1987. I.a. due to this presence social expenditures –predominantly favouring Wallonia and Brussels- have so far been largely exempted from previous consolidation efforts[38].

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eliminated from our analysis when including country fixed effects. The latter is appropriate in panel data analysis, while country fixed effects appear absent from the analysis of Persson and Tabellini (2003 p. 179-183).

Because geographically split political parties is very typical of Belgium, an empirical test tailored to the Belgian context would be to check if Francophone Belgian politicians maximize the deficit while Flemish politicians minimize it. To this effect one would need to regress vote shares of incumbent Francophone and Flemish parties in the federal government during subsequent elections on the federal primary balance. For Francophone parties we would expect a negative relationship: if the federal primary balance worsens, their vote share is expected to increase. For Flemish parties we would expect a positive relationship. However, problems with such a regression analysis would be 1) reverse causality (it could well be increased vote share of particular parties that influence the primary balance, rather than the reverse) and 2) the fact that there are only 3 regions in Belgium, the latter preventing us from conducting a panel regression.

[37] An example is commuting: there is little commuting between the 2 major regions of Belgium. (see e.g. Persyn and Torfs 2012)

[38] A third alternative reasoning is along the lines of Alesina and Drazen (1989 p. 2), who predict the anticipated polarized –i.e. uneven- geographical incidence of any future budget consolidation itself to postpone consolidation efforts.

V. Conclusion

Our calculations above at least suggest that there is a geographical dimension to the political economy of debt financing in Belgium. The same diverging shares of the Belgian Regions in tax revenues and in public expenditures make Flanders pay disproportionately for tax funded public expenditures ***and*** pay even more disproportionately the interest bill that is the consequence of the heavy debt financing of public expenditures since 1970. Hence calculating interregional transfers in Belgium is less futile than it seems: the differing regional costs of federal debt accumulation in Belgium may be an explanation of the Belgian history of high deficits and high debts since the beginning of the 1970s.

The implications of our calculations strongly differ between politicians elected in Flanders and politicians elected in Wallonia and Brussels. Given the resp. shares of the Belgian regions in tax revenues and in public expenditures, politicians elected in the Walloon and the Brussels region seem to have an interest in keeping on "expanding the federal budget constraint" -i.e. in eliciting extra expenditures- ***in particular*** if the extra expenditures are funded by borrowing rather than by tax revenue[39]. Hence, politicians from these Regions should maximize the federal deficit, as long as the size of the deficit does not cause visible macroeconomic damage to their region.

For Flemish politicians the incentives seem to be the exact opposite of the incentives of Walloon and Brussels politicians, ***assuming*** that Flemish voters are aware that debt financed expenditures disproportionately fail to benefit them. When offered to them, Flemish politicians should even favour the policy option of closing the total budget deficit with extra tax revenue ***exclusively generated in Flanders*** over keeping on running a budget deficit. Expenditures disproportionately benefiting Wallonia and Brussels are far "cheaper" for Flanders if tax funded than if debt funded.

A remaining puzzle is the fact that the interest burden that comes with deficit-financed expenditures renders those expenditures more expensive than tax funded expenditures ***also for Wallonia and Brussels***, though to a lesser extent than for Flanders. Debt-funded expenditures are only "cheap" for Wallonia and Brussels ***when compared to their cost for Flanders***. In other words: also Wallonia –and Brussels-, while benefiting the most (on a gross basis) from debt financing, is a net payer with respect to debt financing, because also Wallonia and Brussels -each year- pays federal taxes out of which -each year- the interest bill is paid. As long as debt is not repaid, expenditures financed with borrowing in a particular year generate an interest bill that falls due in every of the following years. I.e. ***all*** Belgian regions may lose on a net basis from debt financing.

Also tying the hands of competitors does not seem to explain the behaviour of Wallonia and Brussels: unlike e.g. the Republicans in the US, Wallonia and Brussels are ***guaranteed*** representation in the next Belgian federal government.

Therefore, it seems to require considerable myopia –or even irrationality- of Walloon and Brussels politicians to prefer debt-funded expenditures over tax-funded expenditures. An explanation could be that the part of taxation generated in Wallonia and Brussels to pay the interest bill may generally be spread over the ***entire*** Walloon and Brussels population, while individual governing politicians may be able to target part of the extra expenditures (or targeted tax decreases) made possible by debt financing to ***their constituents***. These constituents mostly only live in a particular geographical

[39] This interest should be understood here from a political-economy perspective, i.e. it should be understood as the "career interests" of politicians representing expenditure receiving jurisdictions in the federal government, as those politicians would be able to claim the credit for the extra expenditures. The welfare effects of these extra expenditures are a different matter altogether. E.g. Algoed and Persyn (2009) find an economic growth reducing and inequality increasing effect of interregional fiscal transfers in European countries. Knight (2004) finds with respect to pork-barrel spending in US districts that it is inefficient and that it generates a large deadweight loss.

part of Francophone Belgium[40]. Another intra-Francophone-Belgium explanation of this seeming irrationality may be that some Francophone Belgian parties may feel less sure of remaining in power than other parties, with reference to the political economics framework developed by Persson and Tabellini (2000 p. 345-372). A final explanation may be the prisoner's dilemma type of setting suggested by Roubini and Sachs (1989 p. 924): perhaps also Francophone Belgian parties prefer a balanced budget, but in the absence of strong coordination among Francophone Belgian parties, each of them may have an incentive to protect and expand "its" part of the budget.

The latter mechanisms are not typical of Belgium however. Therefore one may still wonder what is typical of Belgium that the incentives for myopia seem higher than in most other OECD countries, witnessed by Belgium's very high public debt from a historical viewpoint.

[40] This is because most politicians elected for the federal parliament over our period studied only were able to collect votes within an electoral district that was considerably smaller than the region this district was part of. Exceptions were those few politicians running for the Belgian Senate. For Belgian examples of political economy motivated distribution of public expenditures to particular electoral districts only, see Jennes and Persyn (2014) and Jennes (2014).

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